

CLAIMS

1. A yarn comprising polyester fibres which yarn is characterized in that following heat treatment the yarn  
5 has a stress, at 50% yarn stretch, of no more than  $30 \times 10^{-3}$  cN/dtex and, at the same time, a percentage recovery of at least 60%.
2. A yarn according to Claim 1 where the Uster  
10 unevenness is no more than 2.0%.
3. A yarn according to Claim 1 where the diameter of the crimp is no more than 250  $\mu\text{m}$ .
- 15 4. A yarn according to Claim 3 where the diameter of the crimp is no more than 200  $\mu\text{m}$ .
5. A yarn according to Claim 1, having a strength of at least 2.2 cN/dtex and a shrinkage stress of at least  
20 0.25 cN/dtex.
6. A yarn according to Claim 1, having a crimp retention factor after stretching 10 times of at least 85%.
- 25 7. A yarn according to Claim 6, where the crimp retention factor after stretching 10 times is at least 90%.
- 30 8. A yarn according to Claim 7, where the crimp retention factor after stretching 10 times is at least 95%.

9. A yarn according to Claim 1, which has conjugate fibres having at least two polyester components.

10. A yarn according to claim 9, wherein the conjugated  
5 fibre components are disposed eccentrically relative to one another in the cross-section of the fibres.

11. A yarn according to claim 9, wherein the ratio of the respective melt viscosities of the polyesters is  
10 from 1:1 to 5:1.

12. A yarn according to Claim 9, where at least one component of the conjugate fibres is PTT or PBT.

13. A yarn according to Claim 12, where at least one component of the conjugate fibres is PTT.

14. A yarn according to Claim 13 where the conjugate fibres comprise PTT and PET.

15. A yarn according to Claim 1, having a crimp stretch factor ( $E_0$ ) when heat treated under no load of at least 45%.

16. A yarn according to Claim 1, having a crimp stretch factor ( $E_{3.5}$ ) when heat treated under a  $3.5 \times 10^{-3}$  cN/dtex (4 mgf/d) load of at least 10%.

17. A method of producing a yarn, which method is characterized in that a yarn of conjugate fibres comprising two types of polyester is spun at a take-up velocity of at least 1200 m/min, drawn at a drawing temperature of 50 to 80°C and heat set.

18. A method according to claim 17, wherein the fibres are drawn at a draw ratio such that the drawn yarn tensile elongation is 20 to 45%.

5 19. A method according to Claim 17, which is a direct spin draw method.

20. A method according to Claim 17, which is a 2-stage spinning and drawing method in which yarn is temporarily  
10 wound following the spinning and then drawn.

21. A method of producing a yarn, which method is characterized in that a yarn of conjugate fibres comprising two types of polyester is spun from a  
15 spinneret and taken up at a take-up velocity of at least 4000 m/min by providing a non-contact heater between the spinneret and a godet roller.

22. A method of producing a yarn, which method is characterized in that a yarn of conjugate fibres comprising two types of polyester is spun at a take-up  
20 velocity of at least 5000 m/min.

23. A method of producing a yarn according to Claim 17,  
25 where the spinning temperature is 250 to 280°C.

24. A method of producing a yarn according to Claim 17, where the melt viscosity ratio of the two types of polyester is from 1.05:1 to 5.00:1.  
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25. A method according to claims 17, wherein the yarn produced substantially comprises polyester fibres, which yarn has, following heat treatment, a stress at 50% yarn

stretch is no more than  $30 \times 10^{-3}$  cN/dtex and, at the same time, a percentage recovery is at least 60%.

26. A combined yarn which is characterized in that the  
5 yarn has, in combination, a yarn component which is a yarn according to claim 1 and a yarn component which is a low shrinkage yarn of boiling water shrinkage no more than 10%.

10 27. A yarn according to Claim 1 or a combined yarn according to Claim 26, where a high twist coefficient of at least 5000 is applied.

twist coefficient = number of twists per 1 m (turns/m) x  
15 square root of denier (dtex x 0.9)

28. A fabric which is characterized in that it is produced using at least a yarn according to Claim 1.

20 29. A fabric according to Claim 28 which contains a yarn according to any one of Claims 1 to 16 at least as a component of a combined yarn.

30. A fabric according to claim 28 or Claim 29 which  
25 contains, as an entire yarn, a yarn according to any one of Claims 1 to 16.

31. A fabric according to claims 28 to 30, which additionally contains natural and/or semi-synthetic  
30 fibres.

32. A fabric according to claim 31, wherein the natural and/or semi-synthetic fibres are present as a component yarn in a combined yarn in which the other component is  
35 a yarn according to any of Claims 1 to 16.

